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MEMORANDUM

DATE: August 3, 1990

TO: **Neil Thompson**, Project Officer, USEPA, Region 10FROM: Barry V. Pepich, Senior Organic/Analytical Chemist, ESAT, Region 10 *BP*THROUGH: Joe Blazevich, Chief, GC/MS Section, USEPA, Region 10 *JNB*Bill Scheidler, ESAT Team Manager, ESAT, USEPA, Region 10 *BS*

SUBJECT: Report of Data Validation for Cobert Landfill

TID Number: 10-9006-343

Document No: ESAT-10-141

CC: Carolyn Wilson, RSCC, USEPA, Region 10
 Gerald Muth, DPO, USEPA, Region 10

The following is a QA data review of the VOA analysis of two water samples collected at the Cobert Landfill site and performed at the Manchester Laboratory. This review covers the following samples:

90034550

90034551

The project code for these samples is TEC-512A and the account number is TGB10PU01.



DATA QUALIFICATIONS

The following comments refer to the laboratory performance in meeting the Quality Control specifications outlined in the "CLP Statement of Work, Organic Analysis, revision 2/88".

I. Holding Times: Acceptable.

All samples were analyzed within 14 days of the sampling date and did not exceed the 40 CFR 136 technical holding times. It should be noted that in no case did the "Chain of Custody" sheets indicate the presence or absence of preservatives. It was therefore assumed that sampling was performed according to Region 10 policy, e.g., that all aqueous samples were preserved.

II. GC/MS Tuning and Performance: Acceptable.

All sample analyses were preceded by a Bromofluorobenzene tune less than 12 hours prior to the analysis. In each case the Bromofluorobenzene ion abundances met the appropriate criteria and all tuning summaries agreed with the raw data.

III. Initial Calibration:

An extended five point calibration was performed on 1/22/90. All system performance check compounds (SPCC) and target compounds met minimum average relative response factor (RRF) criteria.

All calibration check compounds (CCC) met criteria for percent relative standard deviation (%RSD) over the entire five point range. Three target compounds exhibited %RSD values that were unacceptable for the five point calibration: Trichloromethane; Methylene Chloride; and Acetone. Of these three only Acetone did not meet %RSD specifications with the omission of one of the points in the initial calibration. The positive values for Acetone have been qualified "J" and the nondetects as "UJ" as a consequence.

IV. Continuing Calibration: Acceptable.

A continuing calibration was performed the day of the analysis as specified in the SOW. All SPCC and target compounds met or exceeded minimum RRF criteria.

No restriction is placed on the data based on %D criteria.

V. Blanks:

A blank was run the day of the analysis. Target compounds found in the blank are summarized in tabular form below.

Compound	Concentration (ug/L)
Chloromethane	0.07
Bromomethane	0.2
Methylene Chloride	3.5
Acetone	7.0
Trans-1,2-Dichloroethene	0.04
Cis-1,2-Dichloroethene	0.06
2-Butanone	0.9
Benzene	0.04
Toluene	0.03
Ethylbenzene	0.04
Styrene	0.05
Bromobenzene	0.07
Total Xylenes	0.9
1,2,4-Trimethylbenzene	0.07
Tert-Butylbenzene	0.06
1,3,5-Trimethylbenzene	0.05
Sec-Butylbenzene	0.07
P-Isopropylbenzene	0.06
Butylbenzene	0.08
1,2,3-Trichlorobenzene	0.2
Isopropylbenzene	0.03
Propylbenzene	0.06
1,3-Dichlorobenzene	0.1
1,4-Dichlorobenzene	0.1
1,2-Dichlorobenzene	0.1
1,2,4-Trichlorobenzene	0.2
Naphthalene	0.3
Hexachlorobutadiene	0.06

None of the target compounds found in the blank were reported in the sample.

VI. Surrogates: Acceptable.

All surrogates displayed acceptable recoveries in the blank, sample, and matrix spike solutions. No additional data qualifiers are required.

VII. Matrix Spike/ Matrix Spike Duplicate: Acceptable.

A Matrix Spike (MS) and Matrix Spike Duplicate (MSD) was performed according to the procedure described in the SOW. All compounds listed in Form III displayed acceptable % recoveries and relative percent differences. No additional data qualifiers are required.

VIII. Internal Standards Performance: Acceptable.

The retention time variations of all internal standards were within 30 seconds of those reported in the mid-range initial calibration standard, which is acceptable. The area% of all the internal standards fell within the specified 50% to 200% of the same calibration standard. No data qualifiers are required on the basis of internal standard data.

IX. TCL Compound Identification: Acceptable.

All TCL compounds' relative retention times were within 0.06 units of the related standards' in the continuing calibration standard. All criteria were met for mass spectral ion matching and ion abundance matching. No additional qualifiers are needed on the basis of compound quantitation.

X. Compound Quantitation:

Compound quantitation was evaluated correctly. The appropriate internal standards were used. The correct quantitation ions and relative response factors were used.

XI. Tentatively Identified Compounds: Acceptable.

The spectra for all tentatively identified compounds met criteria for ion matching and ion abundance matching.

XII. Overall Assessment for the Case.

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Function Guidelines for Evaluating Organics Analyses" (2/1988).

All of the requirements for data qualifiers from the preceding sections (I thru XI) were accumulated. Each sample data summary sheet and each compound was checked for positive or negative results. From this, the overall need for data qualifiers for each analysis was determined. In cases where more than one of the preceding sections required data qualifiers, the most restrictive qualifier has been added to the data.

In general, all unqualified data can be used without restriction. The usefulness of qualified data should be treated according to the severity of the qualifier. Each qualifier has been defined below. Should question arise regarding the qualification of data and its relation to the usefulness, the reader is encouraged to contact the Region 10 laboratory, or the data reviewer.

DATA QUALIFIERS

- U - The compound was analyzed for, but was **not detected**. The associated numerical value is the sample quantitation limit.
- J - The analyte was analyzed for, and was positively identified. However, the associated numerical value is an **estimated quantity**.
- R - The data are **unusable** for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified.
- N - There is **presumptive evidence** that the compound is present in the sample.
- NJ - A combination of "N" and "J" qualifiers. There is **presumptive evidence** that the analyte is present. The associated value is an **estimate of the concentration** for the analyte.
- UJ - A combination of "U" and "J" qualifiers. The analyte was analyzed for, and was **not present above** the level of the associated value. The associated numerical is an **estimate of the quantitation limit** for the analyte in this sample.
- NAR - There is **no analysis result** for this analyte.
- * - The analyte was **present** in the sample.

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EPA Region X Lab Management System
Sample/Project Analysis Results

Page 1

Project: TEC-512A COLBERT LANDFILL

Officer: NET

Account: FA10PU01

Laboratory: EPA, Manchester

Sample No: 90 034550

Description: MS/MSD

Source: Well (Test/Observation)

Begin Date: 90/01/15 14:35

VOA - PP Scan (GCMS)	Water-Total	VOA - PP Scan (GCMS)	Water-Total	
Result	Units	*** Continued ***	Result	Units
Carbon Tetrachloride	1U ug/l	1,3,5-Trimethylbenzene	1U ug/l	
Acetone	1UJ ug/l	Bromobenzene	1U ug/l	
Chloroform	1U ug/l	Toluene	1U ug/l	
Benzene	1U ug/l	Chlorobenzene	1U ug/l	
1,1,1-Trichloroethane	1U ug/l	1,2,4-Trichlorobenzene	1U ug/l	
Bromomethane	1U ug/l	Dibromochloromethane	1U ug/l	
Chloromethane	1U ug/l	Tetrachloroethene	1U ug/l	
Dibromomethane	1U ug/l	Sec-Butylbenzene	1U ug/l	
Bromoform	1U ug/l	1,3-Dichloropropane	1U ug/l	
Chloroethane	1U ug/l	Cis-1,2-Dichloroethene	1U ug/l	
Vinyl Chloride	1U ug/l	trans-1,2-Dichloroethene	1U ug/l	
Methylene Chloride	1U ug/l	2,2,4-TRIMETHYLPENTANE	1U ug/l	
Carbon Disulfide	1U ug/l	1,3-Dichlorobenzene	1U ug/l	
Bromoform	1U ug/l	1,1-Dichloropropene	1U ug/l	
Bromodichloromethane	1U ug/l	2,2-Dichloropropene	1U ug/l	
1,1-Dichloroethane	1U ug/l	2-Hexanone	1U ug/l	
1,1-Dichloroethene	1U ug/l	Ethane, 1,1,1,2-Tetrac+	1U ug/l	
Trichlorofluoromethane	1U ug/l	Xylene	1U ug/l	
Methane, Dichlorodiflu+	1U ug/l	cis-1,3-Dichloropropene	1U ug/l	
1,2-Dichloropropene	1U ug/l	trans-1,3-Dichloroprop+	1U ug/l	
2-Butanone	1U ug/l	Surrog: D4-1,2-Dichlor+	91 % Recov	
1,1,2-Trichloroethane	1U ug/l	Surrog: 1,4-Bromofluor+	92 % Recov	
Trichloroethene	1U ug/l	Surrog: D8-Toluene	97 % Recov	
ETHANE, 1,1,2-TETRAC+	1U ug/l	Surrog: 1-Bromo-2-Fluo+	100 % Recov	
1,2,3-Trichlorobenzene	1U ug/l			
Hexachlorobutadiene	1U ug/l			
Naphthalene	1U ug/l			
2-Chlorotoluene	1U ug/l			
1,2-Dichlorobenzene	1U ug/l			
1,2,4-Trimethylbenzene	1U ug/l			
DBCP	1U ug/l			
1,2,3-Trichloropropene	1U ug/l			
Tert-Butylbenzene	1U ug/l			
Isopropylbenzene (Cume+	1U ug/l			
p-Isopropyltoluene	1U ug/l			
BENZENE, ETHYL-	1U ug/l			
BENZENE, ETHENYL-	1U ug/l			
BENZENE, PROPYL-	1U ug/l			
Butylbenzene	1U ug/l			
4-Chlorotoluene	1U ug/l			
1,4-Dichlorobenzene	1U ug/l			
1,2-Dibromoethane (EDB)	1U ug/l			
1,2-Dichloroethane	1U ug/l			
Vinyl Acetate	1U ug/l			
4-Methyl-2-Pentanone	1U ug/l			

(Sample Complete)

Project: TEC-512A COLBERT LANDFILL

Officer: NET

Account: FA10PU01

Laboratory: EPA, Manchester

Sample No: 90 034551

Description: NONE

Source: Well (Test/Observation)

Begin Date: 90/01/15 14:00

VOA - PP Scan (GCMS)	Water-Total		VOA - PP Scan (GCMS)	Water-Total		VOA - PP Scan (GCMS)	Water-Total	
	Result	Units		*** Continued ***	Result		Units	
Carbon Tetrachloride	1U	ug/l	1,3,5-Trimethylbenzene	1U	ug/l	1,1-Dichloroethane	105	% Recov
Acetone	1UJ	ug/l	Bromobenzene	1U	ug/l	1,1-Dichloroethene	129	% Recov
Chloroform	1U	ug/l	Toluene	1U	ug/l	Trichlorofluoromethane	126	% Recov
Benzene	1U	ug/l	Chlorobenzene	1U	ug/l	Methane, Dichlorodiflu+	89	% Recov
1,1,1-Trichloroethane	1U	ug/l	1,2,4-Trichlorobenzene	1U	ug/l	1,2-Dichloropropane	104	% Recov
Bromomethane	1U	ug/l	Dibromochloromethane	1U	ug/l	2-Butanone	166	% Recov
Chloromethane	1U	ug/l	Tetrachloroethene	1U	ug/l	1,1,2-Trichloroethane	98	% Recov
Dibromomethane	1U	ug/l	Sec-Butylbenzene	1U	ug/l	Trichloroethene	93	% Recov
Bromoform	1U	ug/l	1,3-Dichloropropane	1U	ug/l	ETHANE, 1,1,2,2-TETRAC+	96	% Recov
Chloroethane	1U	ug/l	Cis-1,2-Dichloroethene	1U	ug/l	1,2,3-Trichlorobenzene	84	% Recov
Vinyl Chloride	1U	ug/l	trans-1,2-Dichloroethene+	1U	ug/l	Hexachlorobutadiene	90	% Recov
Methylene Chloride	1U	ug/l	2,2,4-TRIMETHYLPENTANE	1U	ug/l	Naphthalene	80	% Recov
Carbon Disulfide	1U	ug/l	1,3-Dichlorobenzene	1U	ug/l	2-Chlorotoluene	88	% Recov
Bromoform	1U	ug/l	1,1-Dichloropropene	1U	ug/l	1,2-Dichlorobenzene	92	% Recov
Bromodichloromethane	1U	ug/l	2,2-Dichloropropane	1U	ug/l	1,2,4-Trimethylbenzene	87	% Recov
1,1-Dichloroethane	1U	ug/l	2-Hexanone	1U	ug/l	DBCP	81	% Recov
1,1-Dichloroethene	1U	ug/l	Ethane, 1,1,1,2-Tetrac+	1U	ug/l	1,2,3-Trichloropropane	114	% Recov
Trichlorofluoromethane	1U	ug/l	Xylene	1U	ug/l	Tert-Butylbenzene	88	% Recov
Methane, Dichlorodiflu+	1U	ug/l	cis-1,3-Dichloropropene	1U	ug/l	Isopropylbenzene (Cume+)	88	% Recov
1,2-Dichloropropane	1U	ug/l	trans-1,3-Dichloroprop+	1U	ug/l	p-Isopropyltoluene	88	% Recov
2-Butanone	2U	ug/l	Surrog: D4-1,2-Dichlor+	93	% Recov	BENZENE, ETHYL-	94	% Recov
1,1,2-Trichloroethane	1U	ug/l	Surrog: 1,4-Bromofluor+	93	% Recov	BENZENE, ETHENYL-	86	% Recov
Trichloroethene	1U	ug/l	Surrog: D8-Toluene	99	% Recov	BENZENE, PROPYL-	86	% Recov
ETHANE, 1,1,2,2-TETRAC+	1U	ug/l	Surrog: 1-Bromo-2-Fluo+	106	% Recov	Butylbenzene	86	% Recov
1,2,3-Trichlorobenzene	1U	ug/l				4-Chlorotoluene	83	% Recov
Hexachlorobutadiene	1U	ug/l				1,4-Dichlorobenzene	82	% Recov
Naphthalene	1U	ug/l				1,2-Dibromoethane (EDB)	94	% Recov
2-Chlorotoluene	1U	ug/l				1,2-Dichloroethane	104	% Recov
1,2-Dichlorobenzene	1U	ug/l				Vinyl Acetate	NAR	% Recov
1,2,4-Trimethylbenzene	1U	ug/l				Carbon Tetrachloride	102	% Recov
DBCP	1U	ug/l				Acetone	44J	% Recov
1,2,3-Trichloropropane	1U	ug/l				Chloroform	104	% Recov
Tert-Butylbenzene	1U	ug/l				Benzene	101	% Recov
Isopropylbenzene (Cume+)	1U	ug/l				1,1,1-Trichloroethane	108	% Recov
p-Isopropyltoluene	1U	ug/l				Bromomethane	117	% Recov
BENZENE, ETHYL-	1U	ug/l				Chloromethane	106	% Recov
BENZENE, ETHENYL-	1U	ug/l				Dibromochloromethane	100	% Recov
BENZENE, PROPYL-	1U	ug/l				Tetrachloroethene	98	% Recov
Butylbenzene	1U	ug/l				Sec-Butylbenzene	88	% Recov
4-Chlorotoluene	1U	ug/l				1,3-Dichloropropane	104	% Recov
1,4-Dichlorobenzene	1U	ug/l				Cis-1,2-Dichloroethene	94	% Recov
1,2-Dibromoethane (EDB)	1U	ug/l				trans-1,2-Dichloroethene+	102	% Recov
1,2-Dichloroethane	1U	ug/l				2,2,4-TRIMETHYLPENTANE	NAR	% Recov
Vinyl Acetate	1U	ug/l				1,3-Dichlorobenzene	91	% Recov
4-Methyl-2-Pentanone	1U	ug/l				1,1-Dichloropropene	98	% Recov

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EPA Region X Lab Management System
Sample/Project Analysis Results

Page 3

Project: TEC-512A COLBERT LANDFILL

Officer: NET

Account: FA10PU01

Laboratory: EPA, Manchester

Sample No: 90 034551

Description: NONE

Source: Well (Test/Observation)

Begin Date: 90/01/15 14:00

VOA - PP Scan (GCMS) Water-Total			VOA - PP Scan (GCMS) Water-Total		
*** Continued ***			*** Continued ***		
Matrix Spike #1	Result	Units	Matrix Spike #2	Result	Units
2,2-Dichlorepropane	100	% Recov	1,2,4-Trimethylbenzene	85	% Recov
2-Hexanone	114	% Recov	DBCP	72	% Recov
Ethane, 1,1,1,2-Tetrac+	93	% Recov	1,2,3-Trichloropropane	94	% Recov
Xylene	86	% Recov	Tert-Butylbenzene	88	% Recov
cis-1,3-Dichloropropene	69	% Recov	Isopropylbenzene (Cume+)	88	% Recov
trans-1,3-Dichloroprop+	83	% Recov	p-Isopropyltoluene	84	% Recov
Surrog: D4-1,2-Dichlor+	105	% Recov	BENZENE, ETHYL-	91	% Recov
Surrog: 1,4-Bromofluor+	102	% Recov	BENZENE, ETHENYL-	82	% Recov
Surrog: D8-Toluene	103	% Recov	BENZENE, PROPYL-	85	% Recov
Surrog: 1-Bromo-2-Fluo+	99	% Recov	Butylbenzene	83	% Recov
			4-Chlorotoluene	82	% Recov
			1,4-Dichlorobenzene	82	% Recov
VOA - PP Scan (GCMS)	Water-Total		1,2-Dibromoethane (EDB)	92	% Recov
Matrix Spike #2	Result	Units	1,2-Dichloroethane	101	% Recov
			Vinyl Acetate	NAR	% Recov
Unknown	92	% Recov	4-Methyl-2-Pentanone	108	% Recov
Carbon Tetrachloride	99	% Recov	1,3,5-Trimethylbenzene	84	% Recov
Acetone	42J	% Recov	Bromobenzene	92	% Recov
Chloroform	100	% Recov	Toluene	92	% Recov
Benzene	98	% Recov	Chlorobenzene	92	% Recov
1,1,1-Trichloroethane	105	% Recov	1,2,4-Trichlorobenzene	83	% Recov
Bromomethane	118	% Recov	Dibromochloromethane	95	% Recov
Chloromethane	105	% Recov	Tetrachloroethene	95	% Recov
Dibromomethane	96	% Recov	Sec-Butylbenzene	86	% Recov
Chloroethane	116	% Recov	1,3-Dichloropropane	104	% Recov
Vinyl Chloride	123	% Recov	Cis-1,2-Dichloroethene	92	% Recov
Methylene Chloride	198	% Recov	trans-1,2-Dichloroethene+	100	% Recov
Carbon Disulfide	124	% Recov	2,2,4-TRIMETHYLPENTANE	NAR	% Recov
Bromoform	98	% Recov	1,3-Dichlorobenzene	92	% Recov
Bromodichloromethane	102	% Recov	1,1-Dichloropropene	97	% Recov
1,1-Dichloroethane	104	% Recov	2,2-Dichloropropane	100	% Recov
1,1-Dichloroethene	134	% Recov	2-Hexanone	103	% Recov
Trichlorofluoromethane	121	% Recov	Ethane, 1,1,1,2-Tetrac+	92	% Recov
Methane, Dichlorodiflu+	90	% Recov	Xylene	86	% Recov
1,2-Dichloropropane	100	% Recov	cis-1,3-Dichloropropene	68	% Recov
2-Butanone	161	% Recov	trans-1,3-Dichloroprop+	81	% Recov
1,1,2-Trichloroethane	98	% Recov	Surrog: D4-1,2-Dichlor+	105	% Recov
Trichloroethene	88	% Recov	Surrog: 1,4-Bromofluor+	102	% Recov
ETHANE, 1,1,2,2-TETRAC+	92	% Recov	Surrog: D8-Toluene	103	% Recov
1,2,3-Trichlorobenzene	82	% Recov	Surrog: 1-Bromo-2-Fluo+	105	% Recov
Hexachlorobutadiene	89	% Recov			
Naphthalene	77	% Recov			
2-Chlorotoluene	88	% Recov			
1,2-Dichlorobenzene	87	% Recov			

(Sample Complete)